

subunits of other organisms. The amino acid number of these regions within each respective protein sequence are shown to the right. The abbreviations of the organisms are as follows.

*E.coli* - *Escherichia coli* (SEQ ID NOS: 72 and 79 in 15A-B, respectively), *V.chol.* - *Vibrio cholerae* (SEQ ID NOS: 73 and 80 in 15A-B, respectively), *H.inf.* - *Haemophilus influenzae* (SEQ ID NOS: 74 and 81 in 15A-B, respectively), *R.prow.* - *Rickettsia prowazekii* (SEQ ID NOS: 75 and 82 in 15A-B, respectively), *H.pyl.* - *Helicobacter pylori* (SEQ ID NOS: 76 and 83 in 15A-B, respectively), *S.sp.* - *Synechocystis sp.* (SEQ ID NOS: 77 and 84 in 15A-B, respectively), *M.tub.* - *Mycobacterium tuberculosis* (SEQ ID NOS: 78 and 85 in 15A-B, respectively), *T.th.* - *Thermus thermophilus* (SEQ ID NOS: 61 and 60 in 15A-B, respectively).

In the Claims:

Please cancel claims 2-6, 10-48, 53, 54, and 56-70 without prejudice and amend claims 1, 7-9, 50, 52, and 55 as follows:

1. (Amended) An isolated DNA molecule from a *Thermus* species encoding a delta subunit of a DNA polymerase III-type enzyme, the isolated DNA molecule either:

- (i) comprising the nucleotide sequence of SEQ ID NO: 157;
- (ii) encoding the amino acid sequence of SEQ ID NO: 158; or
- (iii) hybridizing to the complement of SEQ ID NO: 157 under

hybridization conditions comprising about 0.9M or less sodium citrate buffer at a temperature of at least about 37°C.

7. (Amended) The isolated DNA molecule according to claim 1, wherein the *Thermus* species is *Thermus thermophilus*.

8. (Amended) The isolated DNA molecule according to claim 1, wherein the DNA molecule encodes the amino acid sequence of SEQ ID NO: 158.

9. (Amended) The isolated DNA molecule according to claim 1, wherein the DNA molecule comprises the nucleotide sequence of SEQ ID NO: 157.

50. (Amended) The expression system according to claim 49, wherein the heterologous DNA molecule is in sense orientation and correct reading frame.

52. (Amended) A method of producing a recombinant thermostable delta subunit of a DNA polymerase III-type enzyme from a *Thermus* species, said method comprising:

transforming a host cell with the heterologous DNA molecule according to claim 1 under conditions suitable for expression of the delta subunit, and isolating the delta subunit.

55. (Amended) The method according to claim 52, wherein the *Thermus* species is *Thermus thermophilus*.

Please add new claims 71-76 as follows

71. (New) The isolated DNA molecule according to claim 1, wherein the DNA molecule hybridizes to the complement of SEQ ID NO: 157 under hybridization conditions comprising about 0.9M or less sodium citrate buffer at a temperature of at least about 37°C.

72. (New) The isolated DNA molecule according to claim 71, wherein the hybridization conditions comprise about 0.9M sodium citrate buffer at a temperature of at least about 42 °C.

73. (New) The isolated DNA molecule according to claim 71, wherein the hybridization conditions comprise about 5X sodium citrate buffer at a temperature of at least about 65°C.

74. (New) The isolated DNA molecule according to claim 71, wherein the DNA molecule comprises, over its length, at least about 75 percent nucleic acid identity to SEQ ID NO: 157.

75. (New) The isolated DNA molecule according to claim 71, wherein the DNA molecule comprises, over its length, at least about 80 percent nucleic acid identity to SEQ ID NO: 157.

76. (New) The isolated DNA molecule according to claim 71, wherein the DNA molecule comprises, over its length, at least about 90 percent nucleic acid identity to SEQ ID NO: 157.